THE NAVAL WAR COLLEGE

BY REAR-ADMIRAL A. T. MAHAN, U.S.N.

In military activities, the question of the utilization of the armed forces is the most critical and the most vital that confronts a nation. It is the final stage of a progress which begins with the drill-ground, where the raw recruit is fashioned into the finished soldier, and with the workshops where crude material is converted into weapons of war. Utilization presupposes all the successive processes of organization and equipment; whereby, step by step, out of individual men are built up huge military units, army and army corps, battle fleet and battle-ship, as individual in their power of intelligent corporate action as is the one man in his single existence. Thus, assuming the foundations upon which action rests, the directing authority dismisses them out of mind, concentrating attention purely upon the problem how best *to use* those entities which organization and equipment have supplied. It is to a similar concentration I would here invite readers, asking them also to dismiss from their minds, as not under consideration, all thought of the material of war, of the antecedent processes by which a national fleet, or national army, is built up; to accept each and both as being ready, with only the one question remaining: how they, or either of them, is *to be used* to the best advantage in war?

The methods by which this result is to be reached are divided naturally under three heads. These, in the order of time sequence, are Movement, Strategy, and Tactics. The first of these comprises not only motion, but all the dispositions for marches and transportation of supplies which make possible the transference of armies over ground, in advance or in retreat. This function of moving armies and their trains has received the technical name, Logistics. Various derivations have been assigned for this term; the

one now generally accepted is from a Greek word, the root idea of which is "calculation." It is not necessary to enlarge upon the complications of detail involved in moving huge bodies of men, with their supply-trains, by calculated progress, stage by stage; including each day's march, each day's halt, each day's meals, over roads in any case relatively narrow. All this may be assumed, or left to the imagination. But it should be observed that the special characteristic of this class of operations is Movement, pure and simple. The movement, it is true, is minutely organized in many intricate particulars, and therefore is truly a work of military art; but withal it is not accompanied by those particular directive ideas which in Strategy and Tactics make movement subordinate to action, in which movement is in itself merely contributory. In short, in Logistics movement is the principal; whereas in Strategy and Tactics it is only an agent.

In sea warfare the analogue of Logistics is found, but much simplified in conception by that quality which is the distinguishing characteristic of sea forces — mobility. Mobility facilitates supply, as it does the movement of the fleet itself. The narrow strip of marching surface afforded even by the greatest highways is superseded by the broad bosom of the deep. The ocean presents no natural impediments, few obstacles. Each ship carries stores for weeks; and at night there is no halt, no wait for food-supplies. The vessels move straight on for their goal with unwearied crews. The necessary train of supply-ships, repair-vessels, colliers, all have mobility like to that of the fleet itself. But there remains a counterbalancing factor affecting the question of sea logistics: that of sustained movement and maintenance during a campaign. Fleets more often than not operate remote from home. Consequently, the chief items of supply must traverse long sea distances, under conditions of exposure exceeding the corresponding chain of supplies of an army, which in their approach are secured in large measure by the interposition of the army itself between them and the enemy; a safeguard expressively phrased in the words "covering the communications." In such case land communications may suffer by a raid, unexpectedly and momentarily; but raids by land are restricted in time and space by the imperfect mobility inherent in land conditions, whereas the mobility which is the prerogative of the

water makes sea communications much more liable to successful harassment.

It will be recognized, therefore, that the determining the places of rendezvous for coal and other supplies, the protection of the routes, the whole question of keeping the holds and coal-bunkers full, and the several ships in best steaming condition, is a big administrative calculation and coordination, which is an instance of Logistics because it directly affects the fleet's power of action. Nelson, by diligent watchfulness, always during his last great campaign had his ships stored full for three months; usually for five. That is, the movement of his fleet wherever he would was assured for those periods. Wrote a contemporary to him:

"You have extended the powers of human action. After an unremitting cruise of two long years in the Gulf of Lyons, to have proceeded, *without going into port,* to Alexandria (in Egypt), from Alexandria to the West Indies, from the West Indies back again to Gibraltar; to have kept your ships afloat, your rigging standing, and your crews in health and spirits, is an effort such as never was realized in former times. You have protected us for two long years, and you saved the West Indies by only a few days."

This was an achievement of Logistics, of Movement constant and unimpaired, because of diligent prevision. No fighting; yet it underlay Trafalgar.

Yet it is very different from Trafalgar, which illustrates Tactics; different also from the various movements of the British and hostile fleets in the half-year before Trafalgar, in which there was abundance of motion directed toward specific points and with specific aims, covering both the Atlantic and the Mediterranean. These specific aims are known as Strategy; the movement of ships in furthering them was merely a contributory agent, which resulted in bringing the fleet to the scene of action. In like manner the movement of the ships in the battle was merely contributory, to carry out the tactical conception of the method of attack.

From the outline sketch of Logistics here presented it is evident that it is an immense administrative function, covering many details and requiring much system and prevision, justifying the derivation from "calculation." In management, however, it is somewhat deliberate, and should fall mainly upon men subordinate in office to those who guide the great military conceptions of strategy and tactics. This

is dwelt upon first, because, while as vital to military success as daily food is to daily work, yet, like food, it is not the work. In this paper attention is to fasten upon the work. Like organization and equipment, logistics underlies achievement; but while nearer the field of battle than these are, and coincident and contemporary with the action of the field, it yet is not, so to say, on the fighting-line, nor has it to do with the direction of those movements upon which success and victory immediately hinge.

Evidently the management of such a system of movement and supply requires much experience, and also that training or instruction which in most professions precedes experience and facilitates its acquisition. Similarly, training and experience are requisite in the more advanced stages of the art of war: Strategy and Tactics. And it is to be noted closely, as well as clearly, that the object of training and instruction is not merely to mould the individual, but to impress upon each a common type, not of action only, but of the mental and moral processes which determine action; so that within a pretty wide range there will be in a school of officers a certain homogeneousness of intellectual equipment and conviction, which will tend to cause likeness of impulse and of conduct under any set of given conditions. The formation of a similar habit of thought, and of assurance as to the right thing to do under particular circumstances, reinforces strongly the power of co-operation which is the essential factor in military operations. Combination and concentration, two leading ideas and objects in war, both indicate unity of energy produced by the harmonious working together — co-operation — of many parts.

Obviously such harmony is not best when merely mechanical, for machinery is easily deranged in presence of the unexpected. It is the inspiration of common purpose and common understanding, which, when the unexpected occurs, supplies the guiding thought to meet the new conditions and bend them to the common end. If this condition be adequately attained, the mind of the commander-in-chief will be omnipresent throughout his command; the most unexpected circumstances will be dealt with by his subordinates in his spirit as surely as though he were present bodily. It is difficult to overestimate the importance of such a result. The captains of individual battle-ships, the commanders of

the several corps of an army, have it in them to make or to mar the purposes of the commander-in-chief; not by disaffection, but by lack of comprehension. Lord Howe's entire plan of battle in 1794 was thus wrecked, as was Rodney's on an earlier occasion, by incapacity which previous training should have obviated. In land warfare, the twin battles of Gravelotte and St. Privat, in the Franco-German War, gave illustration, one of a subordinate fully comprehending and consequently not only executing his general's full conception, but developing it even further as opportunity arose; whereas the other, by failure to comprehend, effected only confusion and disorder, without result.

It is to supply such common understanding and inspiration that War Colleges have been instituted. Those who receive the training go forth imbued with a common mode of thought, which latterly has received the name of Doctrine. There is about this word a suggestion of pedantry which impels to a justification for the use of it. In military operations Doctrine, if not given the name, has always existed. When Nelson took his first independent command, three months before the battle of the Nile, he summoned his captains frequently on board his own ship, where he explained to them his proposed methods of action under many possible conditions. This was his Doctrine. When the battle came off, each captain understood what he was to do, and what the others were to do; and that not mechanically, but with a general idea applicable to all probable circumstances. "I should never have dared to attack as I did without knowing the men, but I was sure each would find a hole to creep in at." Each captain was possessed with the spirit and understanding of Nelson himself.

In like manner before Trafalgar, the *Nelson touch* of which he spoke exultingly was the Nelson doctrine, imparted to the captains severally and collectively. Collingwood's impatient remark when Nelson made his famous last signal, "I wish Nelson would stop signaling, for we all know what we have to do," is an affirmation of "doctrine" understood. An imperfect comprehension of Rodney's doctrine, by the captain whose ship was the pivot of the operation, lost the admiral what he considered the greatest opportunity of his life. The absence of "doctrine" is shown by his words subsequently:

"I gave public notice that I expected implicit obedience to every signal

made. My eye on them had more dread than the enemy's fire, and they knew it would be fatal. In spite of themselves I taught them to be what they had never been before—officers."

It is to be observed that the eye of the admiral had to be everywhere, just because there was among the officers no spirit of doctrine on which he could rely.

The French word *doctrinaire*, fully adopted into English, gives warning of the danger that attends doctrine; a danger to which all useful conceptions are liable. The danger is that of exaggerating the letter above the spirit; of becoming mechanical instead of discriminating. This danger inheres especially in—indeed, is inseparable from—the attempt to multiply definition and to exaggerate precision; the attempt to make a subordinate a machine working on fixed lines, instead of an intelligent agent, imbued with principles of action, understanding the general character, not only of his own movement, but of the whole operation of which he forms part; capable, therefore, of modifying action correctly to suit circumstances. "When I tell Lord Howe to do anything," wrote his senior, "he never asks how it is to be done, but goes and does it." This illustrates the proper relation of a superior to a subordinate. It is not only generous, but sagacious. Hence, in the instruction of war colleges, great stress is laid upon the formulation of orders; in that particular respect that while they are to convey lucidly to the subordinate the general aim of the operation, and his own specific share, with such collateral factors as are necessary for his understanding of the situation, the guidance is left in his hands. He is to be told what is to be done, not hampered with directions how to do it; because the "how" may not fit a condition he finds before him, but even more because his own power of independent initiative is too valuable a military asset to be so repressed.

A curious illustration of the existence of a doctrine, among seamen not usually suspected of theorizing but considered specifically practical, is found two hundred years ago in the express order of the British Fighting Instructions that an attacking fleet was first to form on a line parallel with the enemy, and then to steer down upon him, all ships together; the van to engage the enemy's van, the center the center, the rear the rear. It was a very bad doctrine; not least bad in that it took all discretion away from every one. The one saving clause—unexpressed—was that a man who

fights will always be approved. Contrast this with Nelson at St. Vincent. It is true he had received no doctrine from his commander-in-chief, but he had the equivalent—he perceived his senior's plan; and, seeing it about to fail, he broke out of the order and thwarted the enemy's attempt. Brilliant as this was in an exceptional man, it is much better that the average man should be equipped with the understanding which would reach the same result through comprehension. Collingwood, a distinguished example of the average man, was on this occasion close behind Nelson, in the order most favorably situated to imitate him; but he had no doctrine by which to overpass the signals.

It seems self-evident that if a doctrine, as described, is to be valid to the ends of a common spirit and to foster individual power of initiative on certain broad common lines, it must be not only a general principle, or set of such principles, but must be assimilated mentally through numerous illustrations. In other words, it must be based on antecedent experience. Formulated principles, however excellent, are by themselves too abstract to sustain convinced allegiance; the reasons for them, as manifested in concrete cases, are an imperative part of the process through which they really enter the mind and possess the will. On this account the study of military history lies at the foundation of all sound military conclusions and practice, and therefore is the basis, the corner-stone, upon which the instruction of a War College rests. Historical occurrences, analyzed and critically studied, have been the curriculum through which great captains have trained their natural capacity for supreme command. They correspond to the legal cases and precedents which embody and illustrate principles, and so govern judicial decision.

It is evident on consideration that military precedents derived from history are chiefly valuable as embodying principles, which are to be elicited and then to be applied in circumstances often very different. They are not mere models for a copyist. Two battles will rarely be fought on the same ground; and were the ground the same, the constitution and numbers of the opposing forces will vary. A leading feature in War College instruction, therefore, necessarily is the constitution of new cases, problems, hypothetical but probable, to the solution of which are to be applied the principles derived from military history. The

Applicatory System, as it is fitly called, is thus the superstructure; raised upon the basis of experience as embodied in historical military events. It is to be observed that this system, though artificial, reproduces closely the conditions under which military decisions have to be reached in actual war. Each situation that arises in the course of a campaign is a new case, to which the commander-in-chief applies considerations derived from his own experience, or from his knowledge of history. It is not meant that these applicatory processes in the field are always conscious efforts of memory, although Napoleon has said that on the field of battle the happiest inspiration is often only a recollection. The exercise of the functions of a trained mind is instinctive, as well in such recollection as Napoleon cited as in decisions which seem wholly personal. Said the great Austrian general, the Archduke Charles:

"A general often does not know the circumstances upon which he has to decide until the moment in which it is necessary to proceed at once with the execution of the necessary measures. Then he is forced to judge, to decide, to act, with such rapidity that it is indispensable to have the habit of embracing these three operations in a single glance. But that piercing perception which takes in everything at a glance is given only to him who by deep study has sounded the nature of war; who has, so to speak, identified himself with the science."

This is a tribute to the methodical training of faculties. Such training is the peculiar object of the Applicatory System; to identify the mind and its habit of action with the art of war, by continuous exercise in dealing with numerous varied instances; a process of repetition which cannot but have the effect that habit always has upon conduct and character. The statement of this effect appeals to the experience of every one. All know how inevitably and unconsciously one repeats the same action under similar circumstances—the "second nature" of the proverb. When this result has been produced in a number of men who act together, there will extend throughout the entire command a unity of purpose and of comprehension which to the utmost possible extent will insure co-operation, because it has already insured a common understanding and habit of action. Thus of the renowned Light Brigade of the Peninsular War, formed under the still more renowned Sir John Moore, it is said that "the secret of its efficiency lay in inculcating correct habits of command in the regimental officers."

"The system of discipline, of instruction, and of command formed in the persons of their company officers a body of intelligent and zealous assistants, capable of carrying out the plans and *anticipating* the wishes of their seniors; not merely a body of docile subordinates capable of obeying orders in the letter, but untrained to resolute initiative. The most marked characteristics of Sir John Moore's officers were that when left alone they almost invariably did right. They had no hesitation in assuming responsibility. They could handle their regiments and companies, if necessary, as independent units; and they consistently *applied* the great *principle* of mutual support."

A convenient, because recent, instance of an actual case, which might very well have been constituted as suppositive by an instructor, may be found in the circumstances and conditions of the respective military and naval forces of Japan and Russia before their still recent war. The Japanese authorities had before them the positions of the Russian principal army in Manchuria, the fortified port of Port Arthur, the actual or estimated numbers in the field and in the garrison, the Russian main fleet in Port Arthur, the powerful detachment in Vladivostok, the Russian vessels on the way east at various points; probably also the two or three at Chemulpo, the separation of which at a moment evidently critical indicated an incaution which was doubtless responsible for the exposure also of the main fleet to torpedo attack. The various facts here given, with the corresponding elements on the Japanese side, stated in a succinct orderly manner, constitute a problem of exactly the character hypothetically assumed in a War College problem. When stated, the query follows: Estimate the situation; decide your course of action, which is styled technically, the Decision; and for its execution formulate your orders to subordinates. The orders to each subordinate will state clearly the situation, the part assigned to himself, with as much information concerning the movements of others engaged in the general operation as will, or may, enable him to act intelligently. What the subordinate is to accomplish —his mission—is made perfectly clear. How he is to do it is left to his own judgment; partly because the circumstances under which he may have to act can rarely be foreseen, chiefly because reliance can be felt that men brought up with a common vision will do the right thing.

At the War College the propounding such a problem as the one just cited has been preceded by a course of lectures by men whose previous study and experience have con-

stituted them experts. Each officer under instruction submits two papers: (1) Estimate of the Situation, deduced from all the factors, at the close of which is formulated a proposed course of action, which is called the Decision; (2) an Order, or set of orders, for putting the decision into execution. The Estimate of the Situation involves, as a factor, a determination of the proper strategic end to be accomplished; the ultimate achievement of which end, whether at once or later, is styled the Mission. Upon this follows consideration of the numbers and disposition of the enemy's forces, and of one's own, as modifying the possibility of immediately accomplishing the Mission. Thus Mission defines the end; Decision, the practicable first step. If objection be taken to terms such as Mission and Decision —as of Doctrine—the reply is that in all technical treatment technical terms are necessary; and that, when once comprehended, they facilitate discussion, exactly as each foreign word acquired facilitates conversation.

For executing the Decision, orders are addressed to each subordinate for his particular part in the combination which the Decision requires. Both estimates and orders are then reviewed by the instructor, with criticism and suggestion. Ultimately there is a general discussion among all in full conference. Besides the elucidation which any matter receives from the deliberation in common of several minds, this discussion reacts upon the men engaged. It tends to correct errors, yes; but the great advantage is that principles and illustrations enter into the mind more and more through repetition, not only in the particular discussion of the varied phases of a single case, but by reiteration in many discussions of many cases. For a principle, if correct, cannot but recur repeatedly, steadily deepening its grip.

The value of such a study as that suggested above for the Japanese is still more recognizable, if we imagine it undertaken by the Russian staff a year before the war began. This will illustrate the vital connection between national policy and military preparation. Upon this the War College strongly insists, and most properly has embodied in its course. International policies is one of the subjects of study. In the United States people are singularly oblivious of the close relation between peace and preparation. Outside of a few officials of the Navy Department,

public opinion about naval development does not take into its reckoning any digested consideration of our international exposure. Granting that the Russian officials kept such account as they should of Japanese military and naval preparation, they would have had in hand a year before the war the following data: The size, constitution, and disposition of the Japanese army; the numbers and character of the Japanese fleet; the means of transportation available to Japan. As matters of serious dispute existed, these data constituted elements in the problem: How to follow the national policy and yet maintain peace? The Japanese maritime transportation was a large part of the logistics of Japan, as the Siberian Railroad was of that of Russia. The data mentioned, together with the numbers and disposition of the Russian fleets and armies, formed the elements of a problem; to be formulated by a clear and succinct statement of each and all of the factors named. The same demand follows: Estimate the situation; formulate your measures to assure peace or to encounter war (which in such a case are identical); and issue the orders necessary to execute the measures. If the estimate of the situation had been undertaken by officers with a national doctrine, the Decision must have been to strengthen the fleet in the Far East; not by vessels proceeding singly—as was done—but by a division as strong as the Baltic ports could send. An estimate of the situation could not but have shown that, although the Russian navy in the aggregate was superior, the division in the Far East was not as strong as, for security, it should be. The whole navy had been divided injudiciously; the first requisite—Decision—was to reunite it by measures strategically sound, which the despatch of a string of single ships proceeding out was not. The strong naval conviction prevailing in the United States against dividing our battle fleet between the Atlantic and the Pacific was derived from the War Games of the College, testing the strategic situations resulting from such division.

The War Game, which has been used for many years at the War College, attacks the same class of problems as does the written "estimate of the situation" and formulation of measures just described. In it the men who write the "estimates," etc., are pitted one against the other, as opponents. Similar data are furnished to each: a statement of the conditions as far as known to his superiors—namely, the

disposition of the forces on his side, and such account of the enemy's as may be reasonably assumed to be ascertained, but necessarily less full than that of one's own. Each receives also, as from a national government, general instructions, indicating the particular service expected of his command. This is his " Mission ": *what* is to be done, not *how* to do it. The place of a chess or backgammon board is taken by a large map embracing the scene of operations, upon which are arranged and moved tokens representing the positions held by both sides, as well as the numbers and successive dispositions of the various forces. The game thence proceeds, move by move. The two contestants occupy separate rooms, while in a third is an umpire who pronounces on each move; whether, by the experiences of war, it is feasible, and so permissible. Within a certain range he decides by his own judgment and accumulated experience; while in other cases there are fixed rules and fixed values assigned to different forces and to different situations. Doubtful cases are under certain conditions submitted to the decision of the dice; thus recognizing Nelson's saying that some allowance must be made for chance, and Napoleon's that war cannot be made without running risks. The game as described embraces all the operations of a campaign, from the start from home to the collision of the fleets. It thus opens with strategy, which embraces the whole field; narrows gradually till the fleets feel each other's proximity, and are, as it were, manœuvering for advantage on the field, a phase called stratego-tactical; finally, there are the sighting each other and the manœuvers of battle, technically styled tactical. In these last, on the game-board, the rules governing " values " are based entirely on the scheme of battle exercises of the battle fleet in April, 1911; a circumstance illustrating the interconnection between fleet and college, which it may be hoped will be continually greater.

If a nation possesses military positions abroad, many cases in war, and many hypothetical cases at a War College, will present situations which involve both land and sea forces. This added condition constitutes a more intricate problem; but the method of dealing with it, whether by written estimates and subsequent discussion, or by war game, is the same. Owing to more numerous data, the condition is more complex; but the manner of solution will be like.

It will also readily occur that in every War College—and many nations now possess them—the scenes chosen for hypothetical cases to be discussed and solved will be primarily the regions in which general national policies, or particular international relations, make military or naval operations most probable. Historical incidents, *wherever* occurring, are profitable for instruction, for the elucidation or confirmation of the great universal principles of military action; but, for application of those principles, the scenes first to be selected are those where the national forces are most likely to act.

The treatment, purposely discursive because intended to be popular, has made mention of Logistics, Strategy, Tactics, and National Policies, giving at greater or less length the character of the subjects thus named, their relation to the purpose of the Naval War College, and the method of treatment; emphasizing the great object of evolving a common mode of thought, and appreciation of proper military conduct, among all the officers of a navy. There remains one other subject, International Law. In a country full of lawyers and politicians, with a government possessing a President, Secretary of State, and a large corps of ambassadors and foreign ministers, it may be asked doubtfully why naval officers should give time to international law. The reply is that in this extensive system of functionaries the naval admiral or captain is incidentally one; and that, in international law, as in strategy and tactics, he must know the doctrine of his country. In emergencies, not infrequent, he has to act for his superior, without orders, in the spirit and manner his superior would desire. If in war, the war may be complicated by a dangerous foreign dispute arising from action involving neutral rights; or, on the other hand, a neutral unright may be tolerated to the disadvantage of the national cause. In peace, injudicious action may precipitate hostilities; or injudicious inaction may permit infringement of American rights, of persons or of property. The treatment of international law, consequently, is the same as of the more distinctively military subjects —a competent lecturer and lecture system, the posing of problems, their solution by the student, comment and criticism by the teacher, discussion in full conference.

A. T. MAHAN.